

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: Fumikazu MACHINO et al.

Serial Number: 09/180,432

Group Art Unit: 1771

Filed: February 12, 1999

Examiner: U. Ruddock

For: THERMAL-ACOUSTIC INSULATION AND METHOD  
OF MANUFACTURING SAME

Handwritten notes: #13, 4/11/01, and a signature.



DECLARATION UNDER 37 CFR 1.132

Director of Patents and Trademarks

Washington, D.C. 20231

Sir:

I, Fumikazu MACHINO, a citizen of Japan, hereby declare and state:

1. I have a master's degree in engineering, which was conferred upon me by Kyoto Institute of Technology in Kyoto, Japan, in 1976.

2. I have been employed by OSAKA GAS CO., LTD., since 1988 and I have a total of 12 years of work and research experience in Carbon Fibers.

3. I understand that the above application has been rejected over United States Patent 4,997,716 to McCullough, Jr. et al. In order to show the differences between the subject matter of United States Patent 4,997,716 to McCullough, Jr. et al. and the subject matter of the application, I and those under my direct supervision and control have conducted experiments on a number of samples of the subject matter of the application and the subject matter of United States Patent 4,997,716 to McCullough, Jr. et al. and have obtained the results shown in the attached Reference 1.

I further declare:

(1) In order to produce a 6K tow in which 6,000 fibers having a fiber diameter of 4 to 20  $\mu\text{m}$  are bundled to form a fiber aggregate, it is necessary that each of the fibers have approximately a length of 30 cm or longer;

(2) At the time the instant application was made, it was technically difficult to produce a 6K tow fiber aggregate from pitch-based extra fine fibers having an average fiber diameter of from 0.5 to 5  $\mu\text{m}$  by using a melt-blow spinning technique or other known techniques, and therefore pitch-based extra fine fibers having an average fiber diameter of from 0.5 to 5  $\mu\text{m}$  which can form a 6K tow carbon fibers did not exist;

(3) The data shown in Reference 1 are true; and

(4) Carbon fibers utilized in the instant application are substantially linear.

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signed this 2 day of April, 2001

Fumikazu Machino

Fumikazu MACHINO

# Reference 1

## Element Analysis

	Carbonizing Temperature (°C)	C (wt.%)	H (wt.%)	N (wt.%)
Anisotropic Pitch	500	86	3	0
	600	89	3	0
	700*	93	2	0
	900	98	0	0
	2000	99	0	0
PAN	Precursor (Stabilization)	64	2	18
	T-300**	94	0	6
	T-1000**	98	0	2
	M-40**	99	0	0

Method : Perkin-Elmer 2400CHN Element analysis Meter

\* : Carbon fibers produced according to claim 10 of the instant application

\*\* : Polyacrylonitrile-based Carbon Fibers available from Toray Industries, Inc.